

ES  
Cont'd

the activated expression product of the SakK gene, or functional analogue thereof, activates the expression product of the SakR gene, or functional analogue thereof, and

the activated expression product of the SakR gene, or functional analogue thereof, induces the first promoter of the gene of interest,

thereby causing expression of the gene of interest; and

wherein said SakK gene and said SakR gene are co-transcribed; and

wherein the expression product of said IF gene or functional analogue thereof is

(a) identical or similar to peptides that are naturally produced by lactic acid bacteria and are capable of inducing the production of bacteriocins by said lactic acid bacteria,

(b) not a lantibiotic, and

(c) induces the expression of genes involved in bacteriocin production in lactic acid bacteria.

45. A gene expression system comprising:

(1) an operon comprising

(a) an IF gene;

(b) a SakK gene;

(c) a SakR gene; and

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(2) a vector comprising a cloned polynucleotide of interest linked to a first inducible promoter,

wherein in said gene expression system, the expression product of the IF gene activates the expression product of the SakK gene, and

the activated expression product of the SakK gene activates the expression product of the SakR gene and

the activated expression product of the SakR gene induces the first promoter of the gene of interest,

thereby causing expression of the gene of interest; and

wherein said SakK gene and said SakR gene are co-transcribed; and

wherein said the expression product of said IF gene is

(a) identical or similar to peptides that are naturally produced by lactic acid bacteria and are capable of inducing the production of bacteriocins by said lactic acid bacteria,

(b) not a lantibiotic, and

(c) induces the expression of genes involved in bacteriocin production in lactic acid bacteria.

46. (Amended) The gene expression system of claim 44,

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wherein said expression product of the IF gene comprises the sequence of residues 19-37 of SEQ ID NO:3.

65. (Amended) An isolated nucleic acid comprising:

EL

two repeated nucleotide sequences 5 to 10 nucleotides long and spaced 17 to 23 nucleotides apart, wherein the downstream member of said repeated sequence is located 30 to 38 nucleotides upstream from a -10 region of a bacterial gene,

wherein said isolated nucleic acid promotes transcription of an operatively linked coding nucleic acid sequence which is activated by an expression product of a SakR gene or functional analog thereof that has been activated by an expression product of a SakK gene or functional analog thereof.

66. (Amended) The isolated nucleic acid of claim 65, wherein said repeated nucleotide sequences are selected from the group consisting of residues 7-14 and 30-38 of SEQ ID NO:6, residues 7-14 and 30-38 of SEQ ID NO:7, residues 7-14 and 30-38 of SEQ ID NO:8, residues 7-14 and 31-38 of SEQ ID NO:9, and residues 7-8, 10-14 and 31-38 of SEQ ID NO:10.

Please add the following new claims:

--67. A gene expression system comprising

*EA*  
*Good*  
(1) a co-transcribed operon comprising:

(a) a SakK gene, or a functional analogue thereof;

(b) a SakR gene, or a functional analogue thereof;

(2) a vector comprising a cloned polynucleotide of interest linked to a first inducible promoter; and

(3) an IF peptide, or a functional analogue thereof;

wherein in said gene expression system, the IF peptide, or functional analogue thereof, activates the expression product of the SakK gene, or functional analogue thereof, and

the activated expression product of the SakK gene, or functional analogue thereof, activates the expression product of the SakR gene, or functional analogue thereof, and

the activated expression product of the SakR gene, or functional analogue thereof, induces the first promoter of the gene of interest,

thereby causing expression of the gene of interest; and

wherein said IF peptide or functional analogue thereof is

(a) identical or similar to peptides that are naturally produced by lactic acid bacteria and are capable of inducing the production of bacteriocins by said lactic acid bacteria,

(b) not a lantibiotic, and

(c) induces the expression of genes involved in bacteriocin production in lactic acid bacteria.--

--68. A method for expressing a gene comprising the following method steps:

I. transforming cells with a gene expression system comprising:

(1) a co-transcribed operon comprising:

(a) a SakK gene, or a functional analogue thereof;

(b) a SakR gene, or a functional analogue thereof; and

(2) a vector comprising a cloned polynucleotide of interest linked to a first inducible promoter;

II. adding to said cells an IF peptide, or a functional analogue thereof;

wherein in said gene expression system, the IF peptide, or functional analogue thereof, activates the expression product of the SakK gene, or functional analogue thereof, and

the activated expression product of the SakK gene, or functional analogue thereof, activates the expression product of the SakR gene, or functional analogue thereof, and

the activated expression product of the SakR gene, or

functional analogue thereof, induces the first promoter of the gene of interest,

thereby causing expression of the gene of interest; and

wherein said IF peptide or functional analogue thereof is

(a) identical or similar to peptides that are naturally produced by lactic acid bacteria and are capable of inducing the production of bacteriocins by said lactic acid bacteria,

(b) not a lantibiotic, and

(c) induces the expression of genes involved in bacteriocin production in lactic acid bacteria.--

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